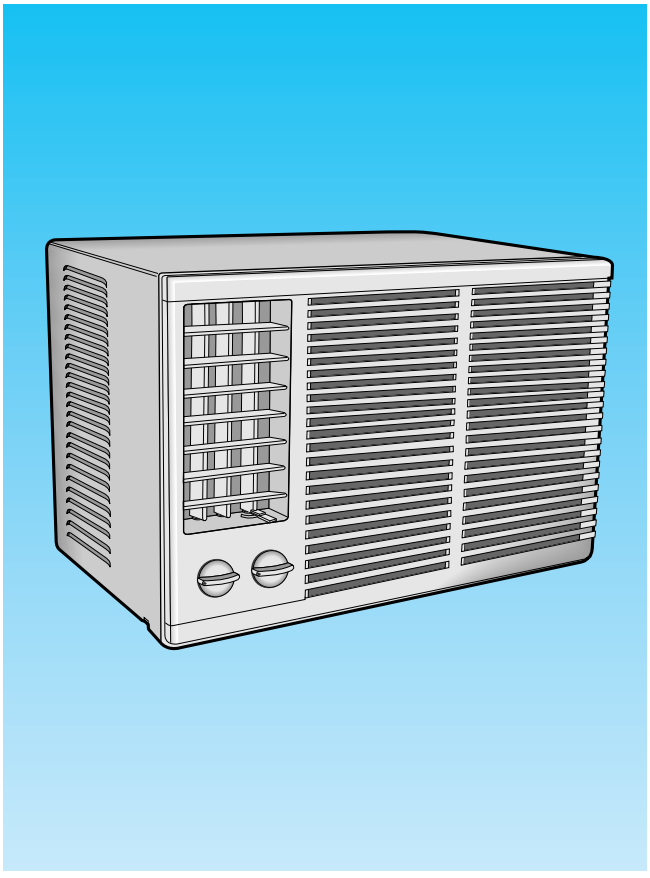
SAMSUNG

ROOM AIR CONDITIONER

AW05B0LA(AW0519)

SERVICE Manual

AIR CONDITIONER



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1. Precautions

1. Warning: Prior to repair, disconnect the power cord from the circuit breaker.

2. Use proper parts: Use only exact replacement parts. (Also, we recommend replacing parts rather than repairing them.)

3. Use the proper tools: Use the proper tools and test equipment, and know how to use equipment may cause problems later-intermittent contact, for example.

4. Power Cord: Prior to repair, check the power cord and replace it if necessary.

5. Avoid using an extension cord, and avoid tapping into a power cord. This practice may result in malfunction or fire.

6. After completing repairs and reassembly, check the insulation resistance, Procedure: Prior to applying power, measure the resistance between the power cord and the ground terminal. The resistance must be greater than 30 megohms.

7. Make sure that the grounds are adequate.

8. Make sure that the installation conditions are satisfactory. Relocate the unit if necessary.

9. Keep children away from the unit while it is being repaired.

10. Be sure to clean the unit and its surrounding area.

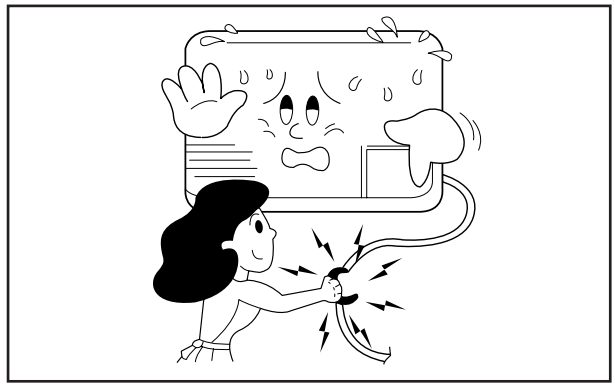


Fig. 1-1 Avoid Dangerous Contact

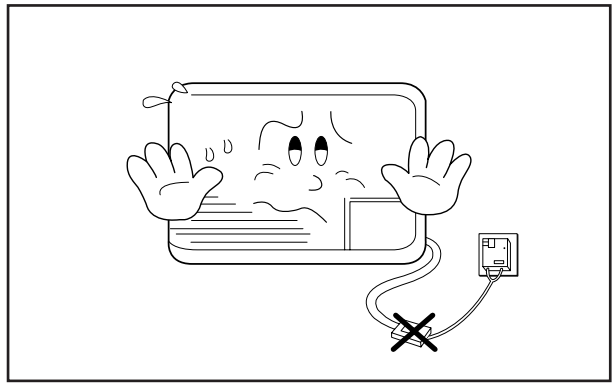


Fig. 1-2 No Tapping and No Extension Cords

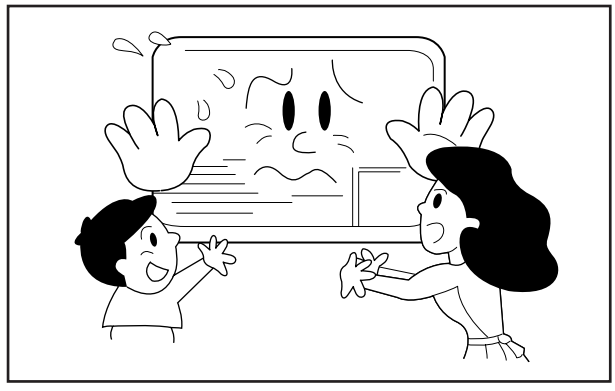


Fig. 1-3 No Kids Nearby!

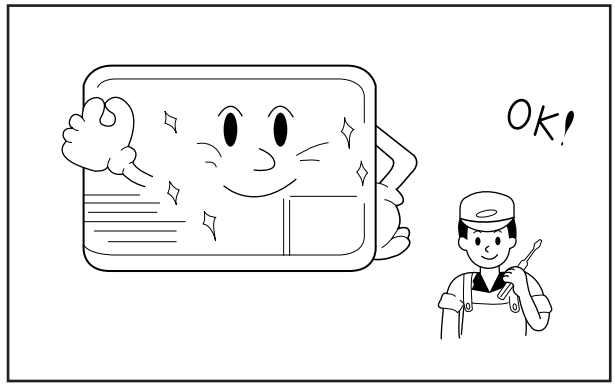


Fig. 1-4 Clean the Unit

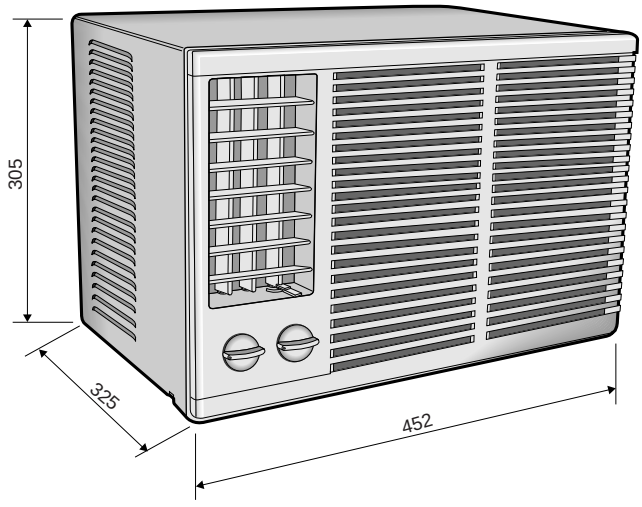
2. Product Specifications

2-1 Table

Item	Unit of Measure	AW05B0LA(AW0519)	Remarks
Type	-	Window	
Dimensions: Width x Height x Depth	Inches	17-7/8 x 12-3/4 x 12	
	mm	452 x 305 x 325	
Packing Size: Width x Height x Depth	Inches	19-1/2 x 17-1/2 x 15	
	mm	493 x 380 x 442	
Voltage:	Volt	115	
Phase	-	Single	
Frequency	Hz	60	
Operating Current	A	5.6	
Power Consumption	W	625	
Refrigerant Type	FREON	R-22	
Refrigerant Charge	OZ	11.6	
Cooling Capacity	BTU/h	5,000	
E.E.R	(BTU/h,W)	8.0	
Humidity Removed	LT/h	0.8	
Air Circulation	C.F.M	125	
Net Weight	LBS	51	
Condenser	Row	1	
Condenser Fan	Type	Propeller Fan	
Evaporator	Row	1	
Evaporator Fan	Type	Squirrel Cage	
Fan Motor	Model	IC - 9625SWD6C	
Compressor(Rotary)	Model	44A056HW2E1	
Overload Protect	-	MRA12040-12008	
Fan Motor Capacitor	μF/VAC	6 & 30/330	
Compressor Capacitor	μF/VAC	(DUAL TYPE)	
Plug Type	-	Parallel	
Fan Speed Control	-	Selector S/W	
Thermo Control	-	Thermostat	
Design Pressure High Side/Low Side	PSI	300/150	

2-2 Dimensions

Unit : mm



3. Installation and Operating Instructions

3-1 Installation

3-1-1 Selecting Area for Installation

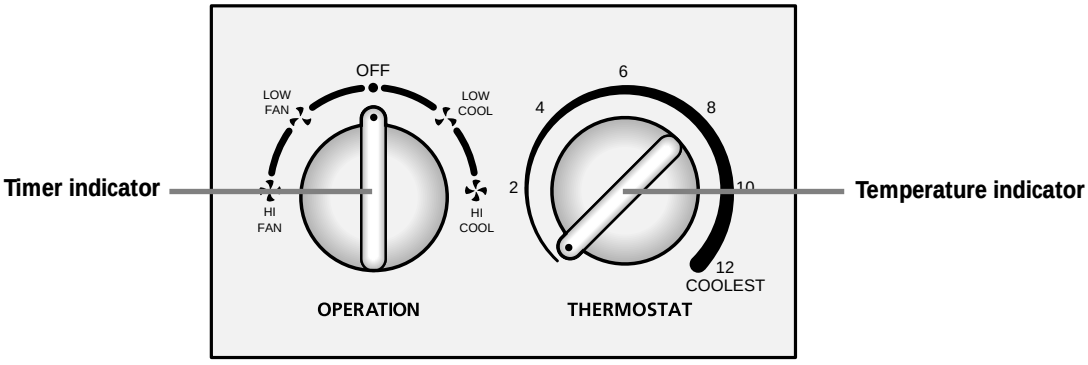
Select an area for installation that is suitable to the customer's needs.

1. Make sure that you install the unit in an area providing good ventilation. The air conditioner must not be blocked by any obstacles affecting the airflow near the air inlet and the air outlet.
2. Make sure that you install the unit in an area that allows good air handling. The installation area must be able to endure vibration from the unit.
3. Make sure that you install the unit away from heat or vapor.
4. Make sure that you install the unit in an area which is cool and has adequate space.
5. Make sure that you install the unit in an area away from TVs, audio units, cordless phones, fluorescent lighting fixtures and other electrical appliances (at least 1 meter clearance).
6. Make sure that you install the unit in an area which provides easy drainage for condensed water.
7. Make sure that you install the unit in area not exposed to the rain or direct sunlight. (Install a separate sunblind if exposed to direct sunlight).
8. Make sure that you install the unit in an area allowing good air movement. Do not install it in a space that would cause noise amplification of noise.
9. Fix the unit firmly if mounted in a high place.

Caution:

It is harmful to the air conditioner if it is used in the following environments : greasy areas (including areas near machines), salty areas such as coast areas, areas where sulfuric gas is present (such as hot spring areas), Contact your dealer for advice.

3-2 Controls and Components



3-2-1 Thermostat

1) Off :
When room temperature is lowered by using the air conditioner, the gas within the thermostat will contract and cause a break in the electrical contact. The compressor will stop.
After the compressor stops, the room temperature will rise.

2) On :
As the room temperature increases to a selected level, the gas of the thermostat expands causing electrical contact, which provides source of electric power to the compressor.
the room temperature will fall and the cycle will repeat.

3) Control Operation :
By turning control knob clockwise(toward higher numbers), the temperature will be cooler.
By turning the control knob counterclockwise(toward lower numbers), the temperature will be warmer.

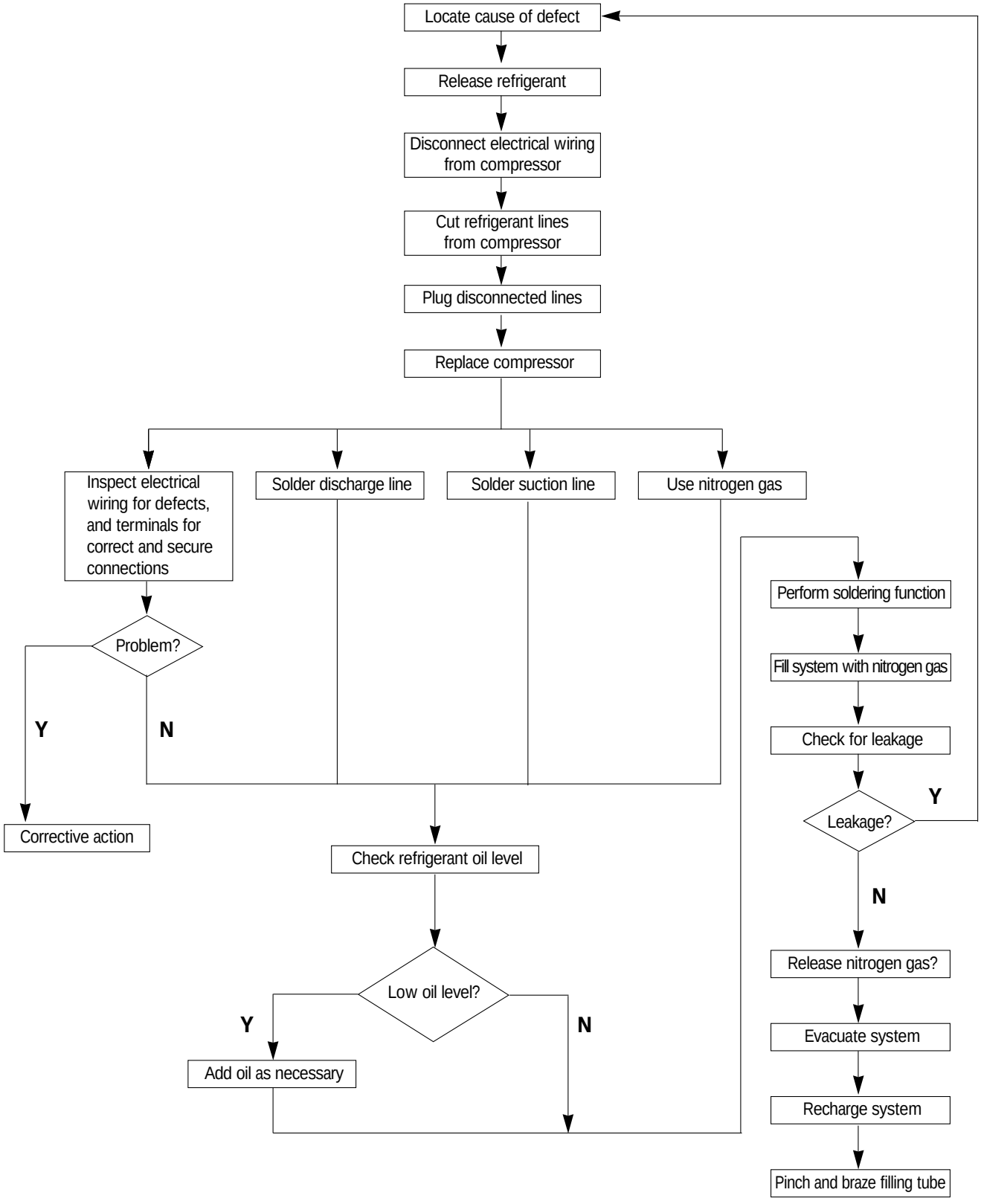
Level 1 : Cool air will be supplied above 30~35°C
Cool air will be ceased below 28~32.5°C
Level 12 : Cool air will be supplied above 11~17°C
Cool air will be ceased below 7~13°C

3-2-2 Operating Switch

- Slowly turn the Fan Selector Switch in the following order : to LOW FAN, HIGH FAN, LOW COOL, HIGH COOL.
- OFF : All functions will be off.
- LOW FAN : The circulation of air is low.
- HIGH FAN : The circulation of air is maximum.
- LOW COOL : Circulation, cooling, and humidity removal are low(all simultaneousy operated).
- HIGH COOL : Circulation, cooling, and humidity removal are maximum(all simultaneously operated).

4. Disassembly and Reassembly

4-1 Compressor Replacement Flow Chart



4-2 Checking the Oil

Put approximately 10cc oil into a transparent container and test it.

4-2-1 Oil quality

Condition of Refrigerant Cycle	Condition of Oil		Remarks
	Color	Odor	
Normal	Light Yellow	No Odor	Return with the system
Overheat	Brown Color	-	Oil Change
Motor Damage	Dark Brown	Pungent Oil	Oil Change

4-2-2 Changing and adding refrigerant oil

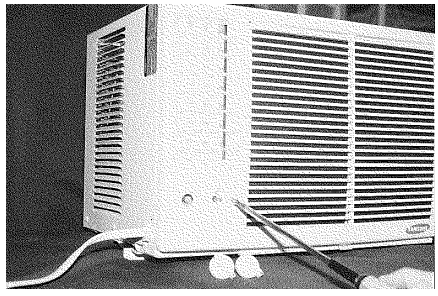
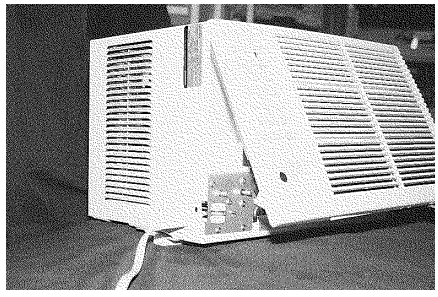
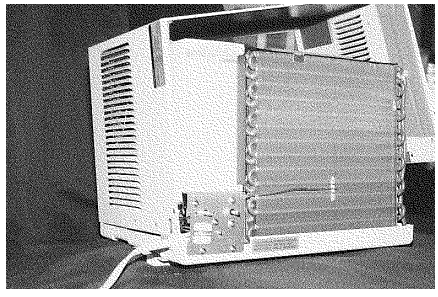
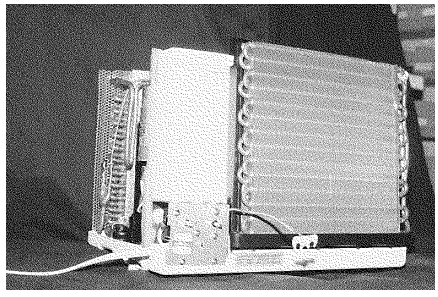
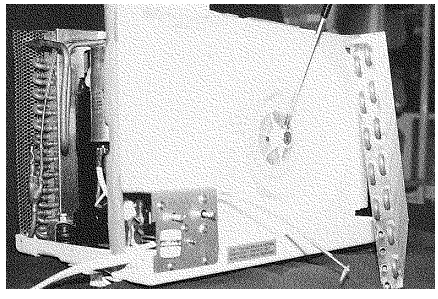
1. Change the compressor - DO NOT recharge the oil as the compressor itself is already charged.
2. Change the condenser .... add 50cc
3. Change the evaporator .... add 50cc
4. When the refrigerant is replaced .... add 30cc oil.
5. After vacuum is completed, the oil is filled through the high pressure side.
6. In the event of a refrigerant leak, generally it is not necessary to add oil (unless the oil has leaked significantly).

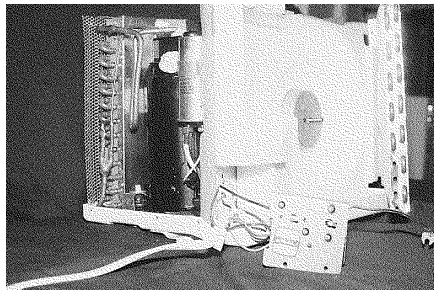
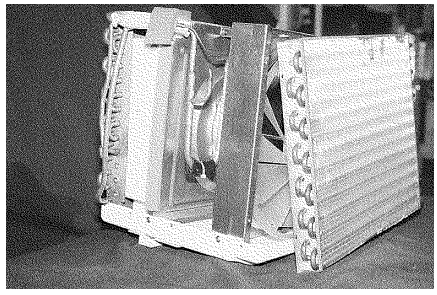
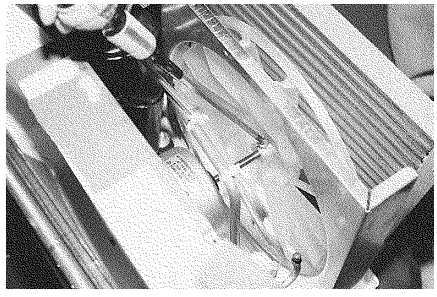
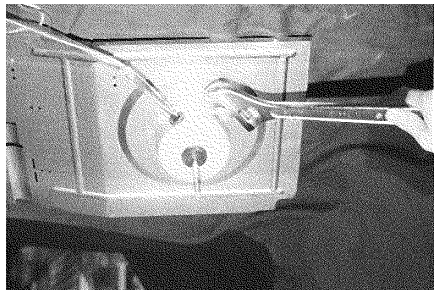
4-3 Refrigerant Oil Specifications

Model	Oil Specification	Oil Change
AW05B0LA(AW0519)	SONTEX 200LT	280CC

4-4 Disassembly and Reassembly Procedure

Stop operating of the air conditioner and remove the power cord before repairing the unit.

No.	Part name	Procedures	Remarks
①	Ass'y - Grille	1. Remove the knobs and the grille screw located behind the knob on right.	
		2. Remove the grille from the cabinet by pushing in on the grille tabs on both cabinet sides, and then lift the grille off the top latches.	
②	Ass'y - Frame	1. Remove the 8 screws on each of the cabinet and lift the cabinet upward.	
③	Ass'y - Evaporator	1. Remove foam-seal on the top of the unit. 2. After unfolding evaporator cover upwardly, remove screw on top of right side. 3. Separate the evaporator from the unit.	
④	Ass'y - Blower	1. Loose the bolt to disassemble the blower.	

No.	Part name	Procedures	Remarks
⑤	Ass'y - Control	1. Remove the 2 screws at the bottom of between the base-pan and the control-box. 2. Separate the power cord from the base pan.	
⑥	Ass'y - Condenser	1. Remove the 6 screws on the condenser. 2. Separate the cond-casing from the base-pan.	
⑦	Ass'y - Fan Propeller	1. Loose the bolt to disassemble the fan-propeller. 2. Separate the fan-propeller from the motor and the cond-casing.	
⑧	Ass'y - Motor	1. Separate the motor and the bulk-head from the base pan. 2. Loose the 4 nuts on the bulk-head.	

5. Troubleshooting

Before troubleshooting the air conditioner,
it is necessary to determine whether the electrical power or the electrical parts are faulty.
Follow this procedure :

5-1 Method of Troubleshooting and Cautions on Troubleshooting

5-1-1 Check the Voltage of the power source.

The input voltage shall be 115V/60Hz
The air conditioner may not operate properly if the voltage is out of this range.

5-1-2 Check weak and fragile parts.

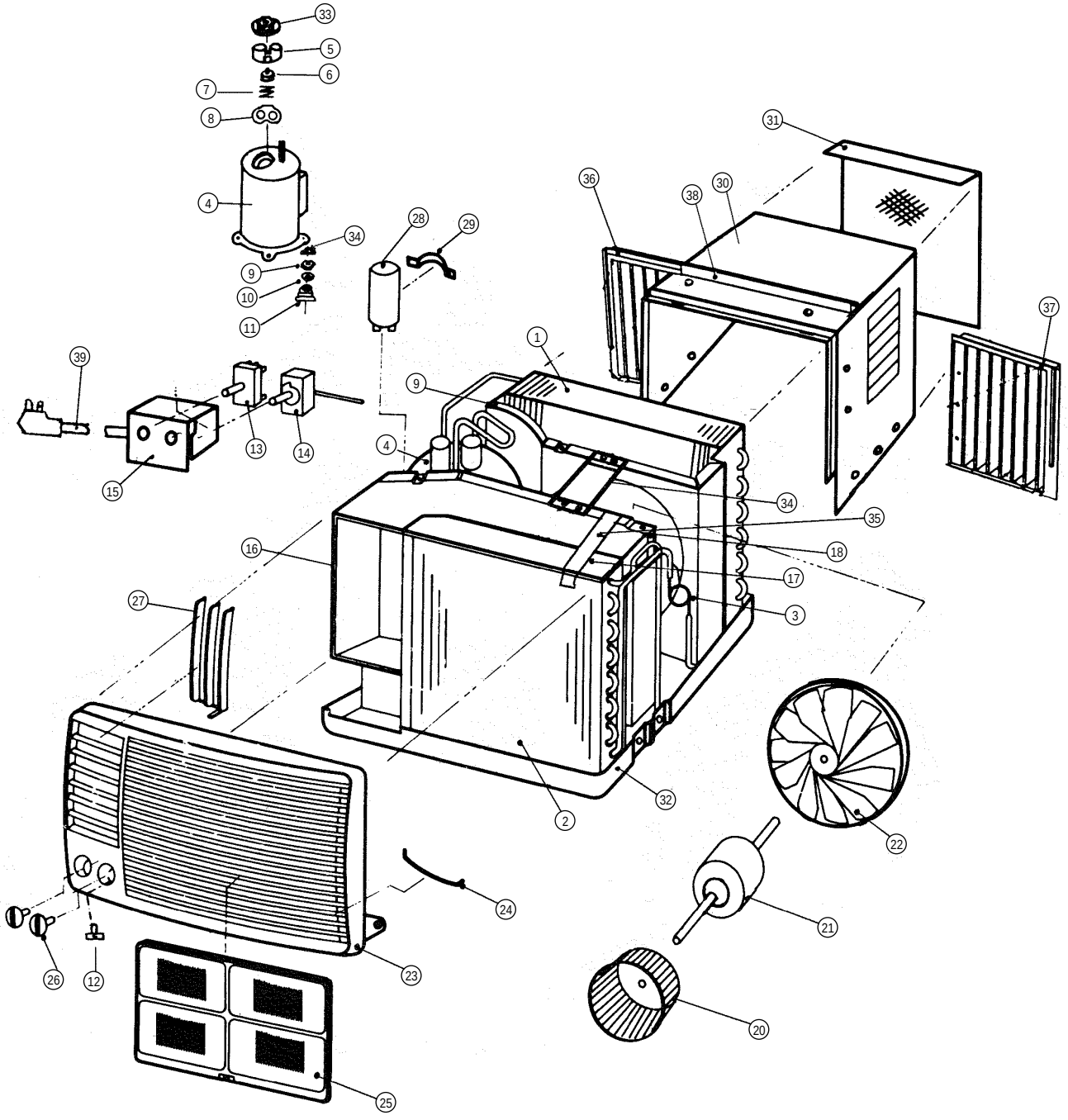
5-1-3 Check the connection of terminals.

5-1-4 When a malfunction occurs:

Malfunction		Check point	Possible cause
①	The compressor does not operate.	1. check the thermostat position. 2. check the connection of the lead wire. 3. check the over load protector. 4. check the compressor.	1. Setting temp is lower than room temp. 2. Disconnection of the lead wire. 3. O.L.P is faulty 4. Compressor is faulty
②	The motor does not operate.	1. check the connection of the lead wire & switch. 2. check the motor	1. disconnection of the lead wire 2. switch is faulty. 3. motor is faulty
③	The cooling capacity is low.	1. check the refrigerant leakage. 2. check the evaporator condition (freezing, blocked with dusts, etc.) ❋Difference of temp. exists between the suction side and the discharge side at least 12°C ❋Standard condition Indoor : 27°C outdoor : 35°C	1. Caused by the pipe crack 2. shortage of refrigerant 3. clean the evaporator & air filter.
④	Noise	1. check vibration of the pipe 2. check the propeller fan and blower (not loose or broken). 3. check bearing noise of the motor 4. check the compressor noise against that of other compressors.	1. pipes are contact with the other parts. 2. the hex nut is loose 3. the parts are broken 4. motor is faulty 5. compressor is faulty

6. Exploded View and Parts List

6-1 AW05B0LA(AW0519)

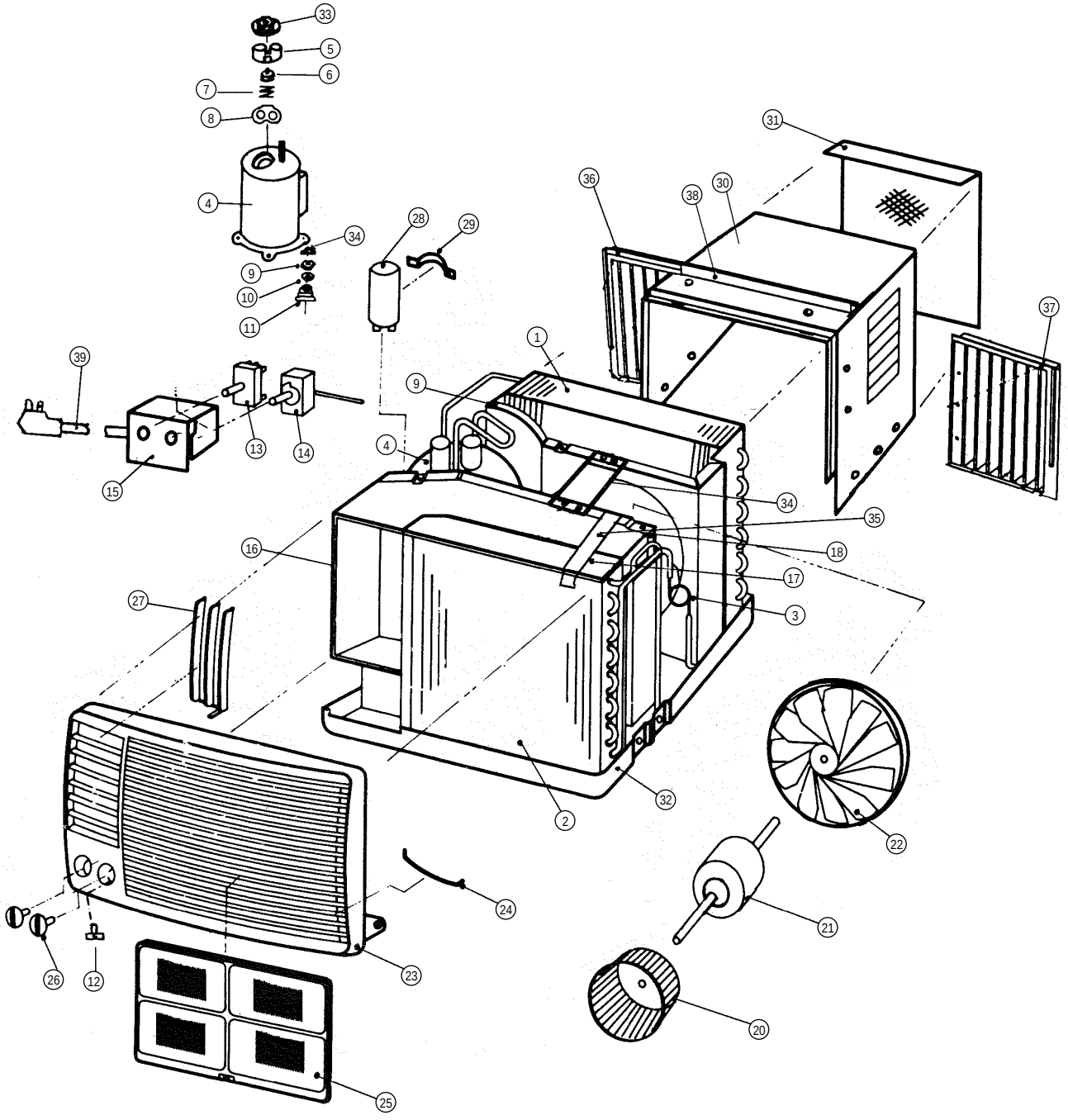


■ Part List

No.	Code No.	Description	Specification	Q'TY	Remarks
				AW050LA	
1	DB96 - 30359A	CONDENSER	D - FIN, HEX, 1RX12S	1	
2	DB96 - 40209A	EVAPORATOR	D - FIN, HEX, 1RX12S	1	
3	DB62 - 31672A	TUBE - CAPILLARY	ASSY, 0D2.75, ID1.2, L1200, -	1	
4	DB95 - 10065J	ASSY - COMP	44A056HW2E1, 5645BTU/H	1	⚠
5	DB63 - 10504A	COVER - TERMINAL	NORYL	1	
6	DB47 - 20007S	OLP	MRA12040 - 12008	1	
7	DB67 - 60020A	SPRING - OLP	STS304 - WPA	1	
8	DB63 - 20002A	GASKET	EPDM, T0. 8	1	
9	6021 - 000124	NUT - HEXAGON	1C, M8, ZPC(YEL)	3	
10	DB60 - 50008A	WASHER - COMP	0D24, T1.6, ZPC, SBC1	3	
11	DB73 -10004A	GROMMET - ISOLATOR	EPDM	3	
12	6003 - 000340	SCREW - TAPTITE	PH, +, C, M4, L8	1	
13	DB34 - 90027C	SWITCH - SELECTOR	250V, 1A, SRB - 315 - 5	1	⚠
14	DB47 - 20029B	THERMOSTAT	BU - A127	1	⚠
	DB61 - 40060A	HOLDER THERMO	T1.5 NTR	1	
15	DB93 - 00010A	ASSY - CONTROL BOX	ASV05, 06CA	1	
16	DB61 - 10073A	CASE -EVAP	FORM PS	1	
17	DB63 - 10007A	COVE - EVAP	PP4017, T2.0, BLK	1	
18	DB98 - 10086B	ASSY - BULK HEAD	ASPO5LAS1	1	
19	DB70 - 10186A	PLATE - COND	SGCC - M, T0.7	1	
20	DB94 - 30085A	ASSY - BLOWER	ABS	1	
	DB60 - 20019A	BOLT - SPECIAL	M6XL 11	1	
21	DB31 - 00002B	MOTOR	IC - 9625SWD6C	1	⚠
22	DB94 - 30071A	ASSY - FAN	ABS + G/FIBER	1	
23	DB92 - 10099B	ASSY - GRILLE PART	HIPS(W9391) (DB92-10031J)	1	
24	DB67 - 60037A	SPRING - PANEL	STS - 304	1	
25	DB63 - 30049H	GUARD - FILTER	HIPS(W9391)	1	
26	DB64 - 50130A	KNOB - ASSY	ABS(W9391)	2	
	DB67 - 60012A	SPRING - KNOB	STS - 5, D6.1, - 0D6.7	1	
27	DB66 - 30073G	BLADE - V	PP(W9391)	1	
28	2501 - 00357	C - OIL	30/6uF, 330V	1	
29	DB65 - 1003A	CLIP - CAPACITOR	SBHG1, T0.6	1	⚠
30	DB64 - 60075A	CABINET	SCP1, T0.7	1	
31	DB71 - 40003A	BAR	STEEL	1	
32	DB90 - 20017F	ASSY - BASE	SCP1, PAINTED	1	
33	DB60 - 30018A	NUT - FLANGE	SM20C, M5	1	
34	DB70 - 10244A	PLATE - REINF	SGCC - M, T0.7	1	
35	DB61 - 30134A	BRACKET - EVAP COVER	SBHG - M, T0.8	1	
36	DB92 - 30005B	ASSY - SHUTTER LF	W9391(WHT)	1	
37	DB92 - 30007B	ASSY - SHUTTER RH	W9391(WHT)	1	
38	DB64 - 20005D	SHUTTER - ANGLE UP	SCP1, T1.0, PAINTED	1	
39	DB39 - 10032F	POWER CORD	SPT - 3, AWG18	1	

6. Exploded View and Parts List

6-1 AW05B0LA(AW0519)



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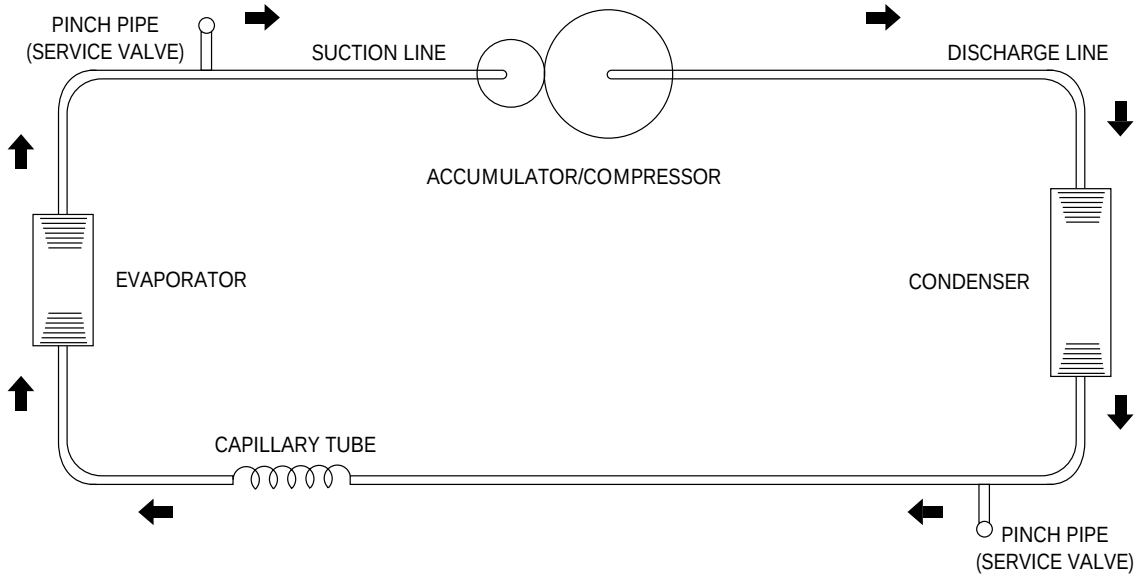
4	DB95 - 10065J	ASSY - COMP	44A056HW2E1, 5645BTU/H	1	⚠
5	DB63 - 10504A	COVER - TERMINAL	NORYL	1	
6	DB47 - 20007S	OLP	MRA12040 - 12008	1	
7	DB67 - 60020A	SPRING - OLP	STS304 - WPA	1	
8	DB63 - 20002A	GASKET	EPDM, T0. 8	1	
9	6021 - 000124	NUT - HEXAGON	1C, M8, ZPC(YEL)	3	
10	DB60 - 50008A	WASHER - COMP	0D24, T1.6, ZPC, SBC1	3	
11	DB73 -10004A	GROMMET - ISOLATOR	EPDM	3	
12	6003 - 000340	SCREW - TAPTITE	PH, +, C, M4, L8	1	
13	DB34 - 90027C	SWITCH - SELECTOR	250V, 1A, SRB - 315 - 5	1	⚠
14	DB47 - 20029B	THERMOSTAT	BU - A127	1	⚠
	DB61 - 40060A	HOLDER THERMO	T1.5 NTR	1	
15	DB93 - 00010A	ASSY - CONTROL BOX	ASV05, 06CA	1	
16	DB61 - 10073A	CASE -EVAP	FORM PS	1	
17	DB63 - 10007A	COVE - EVAP	PP4017, T2.0, BLK	1	
18	DB98 - 10086B	ASSY - BULK HEAD	ASPO5LAS1	1	
19	DB70 - 10186A	PLATE - COND	SGCC - M, T0.7	1	
20	DB94 - 30085A	ASSY - BLOWER	ABS	1	
	DB60 - 20019A	BOLT - SPECIAL	M6XL 11	1	
21	DB31 - 00002B	MOTOR	IC - 9625SWD6C	1	⚠
22	DB94 - 30071A	ASSY - FAN	ABS + G/FIBER	1	
23	DB92 - 10099B	ASSY - GRILLE PART	HIPS(W9391) (DB92-10031J)	1	
24	DB67 - 60037A	SPRING - PANEL	STS - 304	1	
25	DB63 - 30049H	GUARD - FILTER	HIPS(W9391)	1	
26	DB64 - 50130A	KNOB - ASSY	ABS(W9391)	2	
	DB67 - 60012A	SPRING - KNOB	STS - 5, D6.1, - 0D6.7	1	
27	DB66 - 30073G	BLADE - V	PP(W9391)	1	
28	2501 - 00357	C - OIL	30/6uF, 330V	1	
29	DB65 - 1003A	CLIP - CAPACITOR	SBHG1, T0.6	1	⚠
30	DB64 - 60075A	CABINET	SCP1, T0.7	1	
31	DB71 - 40003A	BAR	STEEL	1	
32	DB90 - 20017F	ASSY - BASE	SCP1, PAINTED	1	
33	DB60 - 30018A	NUT - FLANGE	SM20C, M5	1	
34	DB70 - 10244A	PLATE - REINF	SGCC - M, T0.7	1	
35	DB61 - 30134A	BRACKET - EVAP COVER	SBHG - M, T0.8	1	
36	DB92 - 30005B	ASSY - SHUTTER LF	W9391(WHT)	1	
37	DB92 - 30007B	ASSY - SHUTTER RH	W9391(WHT)	1	
38	DB64 - 20005D	SHUTTER - ANGLE UP	SCP1, T1.0, PAINTED	1	
39	DB39 - 10032F	POWER CORD	SPT - 3, AWG18	1	

7. Block Diagram

7-1 Refrigerating Cycle Block Diagram



8. Wiring Diagram

8-1 AW05B0LA(AW0519)

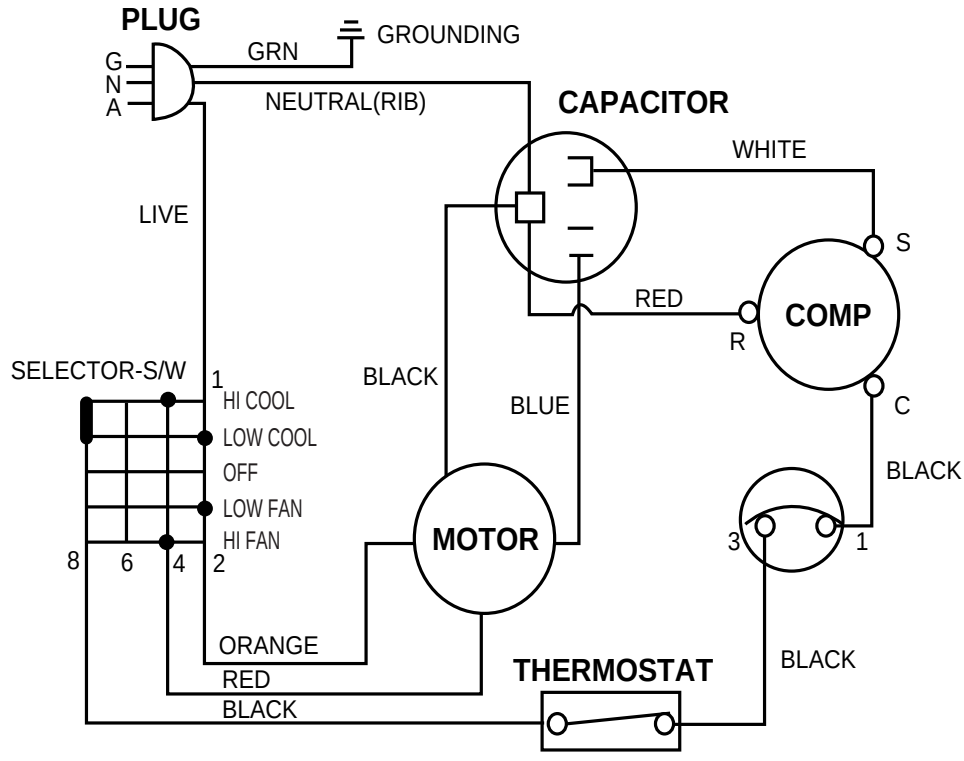


DIAGRAM - ELECTRIC	CAPACITOR : 6/30μF 330VAC